IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants	Jean Charles Le Huec, *et al.*
Serial No. – Pending	Filing Date: February 5, 2002
Title of Application	Medical Instrument And Method For Creating A Cavity For Endoscopic Intervention
Group Art Unit	Examiner

Assistant Commissioner for Patents
Washington, DC 20231

Preliminary Amendment

Dear Sir:

Please enter this preliminary amendment before examination of this case.

Version with Markings to Show Changes Made to the Claims and Abstract

In the claims:

1. (Amended) Medical instrument for creating a cavity for an endoscopic intervention in a human or animal body, comprised of a hollow cylindrical encasing trocar tube [(1)] which can be inserted into an artificial body opening and an expander [(2)] which can be extracted from and retracted into said trocar tube [(1)], characterized in that the expander [(2)] comprised of a retaining element [(6)] arranged outside the trocar tube [(1)] in addition to at least two spring blades [(7)] which are made of a flexible material and form an arc in the respective middle sections, whereby the two ends thereof are fixed to the retaining element [(6)], extending through the tube [(1)] of the trocar and that the trocar tube [(1)] consists of two coaxial sleeves [(3, 4)] arranged at a distance to one another, where the spring blades [(7)] fixed in said retaining element [(6)] extend through the gap [(5)] formed between said coaxial sleeves [(3, 4)].

2. (Amended) Medical instrument in accordance with Claim 1, characterized in that at least two spring blades [(7)] are shifted toward one another on the retaining

element [(6)] in such a way that the plane surfaces created by the arcs are intersecting.

3. (Amended) Medical instrument in accordance with Claim 1 [or 2], characterized in that two spring blades [(7)] are fixed on the retaining element [(6)] in a way that they are shifted to one another at an angle of 90°.

4. (Amended) Medical instrument in accordance with Claim 1 [or 2], characterized in that the expander [(2)] consists of four spring blades [(7)] fixed on the retaining element [(6)] in such a way that they are shifted at an angle of 45°.

5. (Amended) Medical instrument in accordance with [at least one of Claims 2 to 4] Claim 2, characterized in that the individual arched spring blades [(7)] are connected with one another on their vertices by means of a common connecting element [(8)].

6. (Amended) Medical instrument in accordance with [at least one of Claims 1 to 5] Claim 1, characterized in that the spring blades [(7)] are made of elastic TiNi.

7. (Amended) Medical instrument in accordance with [at least one of Claims 1 to 6] Claim 1, characterized in that the retaining element [(6)] is provided with a central opening for inserting at least one additional medical instrument.

8. (Amended) Medical instrument in accordance with [at least one of Claims 1 to 7] Claim 1, characterized in that a locking device on the retaining element [(6)] is used for fixing the expander [(2)] into the respective position when inserted in the trocar tube [(1)].

9. (Amended) Method for the use of the above-mentioned medical instrument, particularly in accordance with [one of Claims 1 to 8] Claim 1, for creating a cavity in a human or animal body for an endoscopic intervention, characterized by the following procedures:

a) Inserting the trocar tube [(1)] into an artificial body opening.

b) Inserting the expander [(2)] through the trocar tube [(1)] until the spring blades [(7)] are projecting from the distal end of said trocar tube [(1)] and extending again in a way that they form an arc so as to create a cavity for an endoscopic intervention.

c) Retracting the expander [(2)] through the trocar tube [(1)] after the endoscopic intervention.

d) Extracting the trocar tube [(1)] from the artificial body opening.

10. (Amended) Method in accordance with Claim 9, characterized by the following procedure:

Inserting an additional medical instrument through the retaining element [(6)] and the trocar tube [(1)] into the cavity formed by the spring blades [(7)] following procedure b).

11. (Amended) Method in accordance with Claim 9 [or 10], characterized by the following procedure:

Fixing the insertion depth of the expander [(2)] in the trocar tube [(1)] after forming the cavity by the spring blades [(7)] in procedure b).

In the Abstract

(Amended) The invention relates to a medical instrument for creating a cavity for an endoscopic intervention in a human or animal body, comprising a hollow cylindrical encasing trocar tube which can be inserted into an artificial body opening and an expander [(2)] which can be extracted from and retracted into said tube [(1)]. The above-mentioned medical instrument consists of a small number of parts and is easy to handle. It is characterized in that the expander [(2)] comprises a retaining element [(6)] which is arranged outside the trocar tube [(1)] in addition to at least two spring blades [(7)] which are made of a flexible material and form an arc in the respective median sections thereof, whereby the two ends thereof are respectively fixed to the retaining element [(6)], extending through the tube [(1)] of the trocar. The invention also relates to a method for the use of said medical instrument.

Respectfully submitted,

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Clean Version of Claims and Abstract

1. Medical instrument for creating a cavity for an endoscopic intervention in a human or animal body, comprised of a hollow cylindrical encasing trocar tube which can be inserted into an artificial body opening and an expander which can be extracted from and retracted into said trocar tube, characterized in that the expander comprised of a retaining element arranged outside the trocar tube in addition to at least two spring blades which are made of a flexible material and form an arc in the respective middle sections, whereby the two ends thereof are fixed to the retaining element, extending through the tube of the trocar and that the trocar tube consists of two coaxial sleeves arranged at a distance to one another, where the spring blades fixed in said retaining element extend through the gap formed between said coaxial sleeves

2. Medical instrument in accordance with Claim 1, characterized in that at least two spring blades are shifted toward one another on the retaining element in such a way that the plane surfaces created by the arcs are intersecting.

3. Medical instrument in accordance with Claim 1, characterized in that two spring blades are fixed on the retaining element in a way that they are shifted to one another at an angle of 90°.

4. Medical instrument in accordance with Claim 1, characterized in that the expander consists of four spring blades fixed on the retaining element in such a way that they are shifted at an angle of 45°.

5. Medical instrument in accordance with Claim 2, characterized in that the individual arched spring blades are connected with one another on their vertices by means of a common connecting element.

6. Medical instrument in accordance with Claim 1, characterized in that the spring blades are made of elastic TiNi.

7. Medical instrument in accordance with Claim 1, characterized in that the retaining element is provided with a central opening for inserting at least one additional medical instrument.

8. Medical instrument in accordance with Claim 1, characterized in that a locking device on the retaining element is used for fixing the expander into the respective position when inserted in the trocar tube.

9. Method for the use of the above-mentioned medical instrument, particularly in accordance with Claim 1, for creating a cavity in a human or animal body for an endoscopic intervention, characterized by the following procedures:

a) Inserting the trocar tube into an artificial body opening.

b) Inserting the expander through the trocar tube until the spring blades are projecting from the distal end of said trocar tube and extending again in a way that they form an arc so as to create a cavity for an endoscopic intervention.

c) Retracting the expander through the trocar tube after the endoscopic intervention.

d) Extracting the trocar tube from the artificial body opening.

10. Method in accordance with Claim 9, characterized by the following procedure:

Inserting an additional medical instrument through the retaining element and the trocar tube into the cavity formed by the spring blades following procedure b).

11. Method in accordance with Claim 9, characterized by the following procedure:

Fixing the insertion depth of the expander in the trocar tube after forming the cavity by the spring blades in procedure b).

Abstract

The invention relates to a medical instrument for creating a cavity for an endoscopic intervention in a human or animal body, comprising a hollow cylindrical encasing trocar tube which can be inserted into an artificial body opening and an expander which can be extracted from and retracted into said tube. The above-mentioned medical instrument consists of a small number of parts and is easy to handle. It is characterized in that the expander comprises a retaining element which is arranged outside the trocar tube in addition to at least two spring blades which are made of a flexible material and form an arc in the respective median sections thereof, whereby the two ends thereof are respectively fixed to the retaining element, extending through the tube of the trocar. The invention also relates to a method for the use of said medical instrument.